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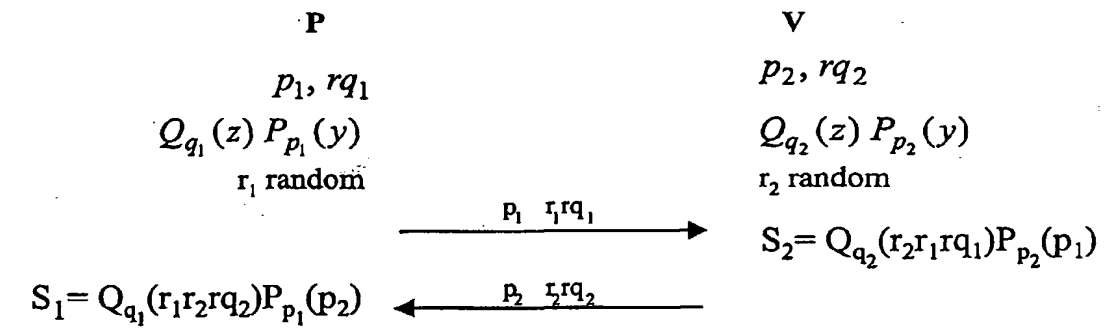
(54) Title: POLYNOMIAL-BASED MULTI-USER KEY GENERATION AND AUTHENTICATION METHOD AND SYSTEM



(57) Abstract: A method of generating a common secret between a first party and a second party, preferably devices (101-105) in a home network (100) that operate in accordance with a Digital Rights Management (DRM) framework. The devices calculate the common secret by evaluating the product of two polynomials P(x, y) and Q(x, z) using parameters previously distributed by a Trusted Third Party (TTP) and parameters obtained from the other party. Preferably the parties subsequently verify that the other party has generated the same secret using a zero-knowledge protocol or a commitment-based protocol. The method is particularly suitable for very low power devices such as Chip-In-Disc type devices.

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